

REMARKS

Claims 1-22 are pending in the application. All claims stand rejected.

Claims 1, 8, 15 and 22 have been amended to further clarify the scope of the invention, including a limitation, in the same or similar language, of “applying a general syntax through the syntax template to an ontological model such that an annotated grammar is formed, the grammatic specification including the annotated grammar.” Support for this amendment is found at least on page 14, lines 5-11 and page 15, lines 4-15 of the specification as originally filed. With these amendments, no new matter is added; acceptance is respectfully requested.

Rejection of Claims 1-22 under 35 U.S.C. § 102(b) and § 103(a)

Claims 1-22 have been rejected under one of 35 U.S.C. § 102(b) and § 103(a) as unpatentable over Young et al. (“Layering Predictions: Flexible Use of Dialog Expectations in Speech Recognition” IJCAI 1989), (“Young”), alone or in view of well known prior art. Applicants disagree with these rejections and request reconsideration.

Applicants provide a computer method and system for analyzing spoken utterances directed to speech-enabled applications. According to the computer method and system, a grammatic specification is generated based on a domain model that is suitable for processing the spoken utterances and based on a syntax template for the domain model. The syntax template 72 tells a syntax manager 62 how to take the general syntax template 72 and turn it into a more specific grammatic specification (e.g., a Backus Naur Form (BNF) grammar) based on information in the domain model 70. Specification, page 14, line 23 through page 15, line 6.

Next, a recognition message, based on one of the spoken utterances recognized by a speech engine, is processed to produce an initial semantic representation of the recognized spoken utterance based on the grammatic specification and the domain model. An initial semantic representation is shown in frame structure form in the specification on page 16, lines 10-21. This initial semantic representation is then converted into a series of propositions.

Young describes a system of layering predictions for anticipating a user’s next utterance. By tracking information communicated between a user and a database, Young infers the user’s goals and plans for accomplishing those goals (Young, page 1544, section 3). By predicting the

user's next utterance, Young puts constraints on the vocabulary it searches for interpreting the user's speech (page 1545, col. 1, para. 2). In making such predictions, it draws on several sources, including "problem solving plans," "the application domain's objects, attributes and their interrelations," "dialog history," and a user's expertise and preferences (page 1545, col. 2, para. 4). Young further describes layered predictions, where a specific prediction is first used to parse a user's speech. If the parse fails, then the speech is reparsed using more general predictions until a good parse is received (page 1545, col. 1 para. 4 – col. 2 para. 1).

Young fails to teach or suggest the present invention as claimed in base Claims 1, 8, 15 and 22. Contrary to the Examiner's assertion, the grammar of Young is distinct from the grammatic specification claimed. The grammatic specification is based on a domain model for a speech-enabled application and based on a syntax template. The objects, attributes and relations of the application are applied to a general syntax through the syntax template. The result, therefore, is an annotated grammar (the grammatic specification) that determines what form user statements may take, and also specifies the legal objects and related attributes for the speech-enabled application.

In contrast, the predictions of Young do not employ a syntax template. Once the content of a user's speech is predicted (i.e., the next state of the user's goal), the concepts associated with this content is collected. Next, the "grammar networks" associated with these concepts are found (Young, page 1547, col. 1, item 5). These grammars merely indicate legal word sequences for each concept that is predicted (page 1544, col. 1, para. 3). This approach is inferior because it requires specific grammars to be associated with each concept of the application, and therefore requires a large number of grammars. The present invention generates a grammatic specification by applying a general syntax template to an ontological model, and therefore does not require maintaining a large number of grammars. This approach enables using fewer templates that are more abstract in nature and may be employed in a range of domains (Specification, page 2 lines 20-26). Young merely teaches using specific grammars that are selected by a method of prediction. Thus, Young does not suggest "generating a grammatic specification" in the manner recited in base Claims 1, 8, 15 and 22 of the present application, i.e., by "...applying a general syntax through the syntax template to an ontological model such that an annotated grammar is formed."

Claims 2-7, 9-14 and 16-21 depend from on of Claims 1, 8 and 15 and thus the foregoing applies to each of the dependent claims. As a result, the § 102 rejection of Claims 1, 2, 4, 5, 7-9, 11, 12, 14-16, 18, 19, 21 and 22 cannot stand, and Applicant respectfully request reconsideration.

The officially noted "well-known prior art" does not add to Young the application of a general syntax, through a syntax template, to an ontological model such that an annotated grammar is formed as in the present invention as now claimed in base claim Claims 1, 8, 15 and 22. Thus no combination of Young and the officially noted prior art can make obvious the present invention of Claims 3, 6, 10, 13, 17 and 20, which depend from respective base Claims 1, 8 and 15 and inherit the above quoted claim terms. Withdrawal of the § 103 rejection of these dependent claims is respectfully requested.

CONCLUSION

In view of the above amendments and remarks, it is believed that all pending claims (Claims 1-22) are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By Mary Lou Wakimura
Mary Lou Wakimura
Registration No. 31,804
Telephone: (978) 341-0036
Facsimile: (978) 341-0136

Concord, MA 01742-9133

Dated: 1/25/07